BACK

EFFECTIVE DATE: 12/01/94

SECTION 1 - PRODUCT IDENTIFICATION

Product Name: ISOPROPANOL ALCOHOL 99%

Chemical Name: Isopropanol Alcohol 99%

Chemical Family: Aliphatic Alcohol 70%

CAS #: 67-63-0

Hazard Class: FLAMMABLE LIQUID (3) UN1219

Emergency #: 1-800-535-5053

SECTION 2 - COMPONENTS

INGREDIENT		% (by VOL)	PEL	TLV
Isopropanol		>99	400 PPM	400 PPM

SECTION 3 - PHYSICAL DATA

Boiling Point	For product	180.00 Deg F @ 760.00 mm Hg
Vapor Pressure	For product	33.00 mm Hg @ 68.00 Deg F
Specific Vapor Density	AIR = 1	2.0
Specific Gravity		.789 @ 60.00 Deg F
Percent Volatile		100%
Evaporation Rate	(ETHYL ETHER = 1)	7.70
NFPA CODES: HEALTH-1 FLAMMABILITY-3 REACTIVITY-0		

SECTION 4 - FIRE AND EXPLOSION INFORMATION

FLASHPOINT:
53.0 Deg F (11.7 Deg C)

EXPLOSIVE LIMIT (PRODUCT) LOWER - 2.0% UPPER - 12.0%

EXTINGUISHING MEDIA:
Alcohol foam or carbon dioxide or dry chemical.

HAZARDOUS DECOMPOSITION PRODUCTS:
May form toxic materials:, carbon dioxide and carbon monoxide, etc.

FIRE FIGHTING PROCEDURES:
Wear self-contained breathing apparatus with a full facepiece operated in the positive pressure demand mode when fighting fires. Water may not be effective for fighting fires. Water may be used to keep fire-exposed containers cool until fire is out.

SPECIAL FIRE AND EXPLOSION HAZARDS:
Vapors form from this product and may travel or be moved by air currents and ignited by pilot lights, other flames, sparks, heaters, electrical equipment static discharges or other ignition sources at locations distant from product handling point. Never use welding or cutting torch on or near drum (even empty) because product (even just residue) can ignite explosively. All five gallon pails and larger metal containers should be grounded and/or bonded when material is transferred.

SECTION 5 - HEALTH HAZARD DATA

PERMISSIBLE EXPOSURE LEVEL:
400 PPM

THRESHOLD LIMIT VALUE:
400 PPM

EFFECTS OF ACUTE OVEREXPOSURE

EYES:
Exposure to liquid or vapor may cause eye irritation. Symptoms may include burning, tearing, redness, and swelling.

SKIN:
Exposure may cause mild skin irritation. Prolonged or repeated exposure may dry the skin. Symptoms may include redness, burning, dry and cracking, and skin burns.

BREATHING:
Excessive inhalation of vapors can cause nasal and respiratory irritation and central nervous system effects including dizziness, weakness, fatigue, nausea, headache and possible unconsciousness.

SWALLOWING:
Can cause gastrointestinal irritation, nausea, vomiting, and diarrhea.

EMERGENCY & FIRST AID PROCEDURES

IF SWALLOWED:
Immediately drink two glasses or water and induce vomiting by either giving Ipecac syrup or by placing finger at back of throat. Never give anything by mouth to an unconscious person. Get medical attention immediately.

IF ON SKIN:
Remove contaminated clothing. Wash exposed area with soap and water. Launder

contaminated clothing before reuse. If symptoms persist, seek medical attention.

IF BREATHED:
If affected, remove individual to fresh air. If breathing is difficult, administer oxygen. If breathing has stopped give artificial respiration. Keep person warm, quiet and get medical attention.

IF IN EYES:
If symptoms develop, move individual away from exposure and into fresh air. Flush eyes for at least 15 minutes while holding eyelids apart.

SECTION 6 - REACTIVITY DATA

STABILITY:
Stable.

CONDITIONS TO AVOID:
None.

INCOMPATIBILITY (MATERIALS TO AVOID):
Do not use with aluminum equipment at temperatures above 120 Deg F., avoid contact with:, strong oxidizing agents, nitric acid, sulfuric acid, aldehydes, halogens.

HAZARDOUS POLYMERIZATION:
Will not occur.

SECTION 7 - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

SMALL SPILL:
Eliminate all sources of ignition such as flares, flames (including pilot lights), and electrical sparks. Absorb liquid on vermiculite, floor absorbent, or other absorbent material and transfer to hood.

LARGE SPILL:
Eliminate all ignition sources (flares, flames including pilot lights, electrical sparks). Persons not wearing protective equipment should be excluded from area of spill until clean up has been completed. Stop spill at source, prevent from entering drains, sewers, streams or other bodies of water. Prevent from spreading. If runoff occurs, notify authorities as required. Pump or vacuum transfer spilled product to clean containers for recovery. Absorb unrecoverable product. Transfer contaminated absorbent, soil and other materials to containers for disposal.

WASTE DISPOSAL METHOD:
Dispose of in accordance with all appropriate Federal, State and local regulations.

SECTION 8 - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION:
If workplace exposure limit(s) or product or any component is exceeded a NIOSH/MSHA approved air supplied respirator is advised in absence of proper environmental control. OSHA regulations also permit other NIOSH/MSHA respirators (negative pressure type) under specified conditions. Engineering or administrative controls should be implemented to reduce exposure.

VENTILATION:
Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below TLV(s).

PROTECTIVE GLOVES:
Wear resistant gloves such as: natural rubber, neoprene.

EYE PROTECTION:
Chemical splash goggles in compliance with OSHA regulations are advised; however, OSHA regulations also permit other type safety glasses.

OTHER PROTECTIVE EQUIPMENT:
To prevent repeated or prolonged skins contact, wear impervious clothing and boots.

SECTION 9 - SPECIAL PRECAUTIONS OR OTHER COMMENTS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:
Containers of this material may be hazardous when emptied, since emptied containers retain product residues (vapors, liquid, and/or solid), all hazard precautions given in the data sheet must be observed.

WARNING!!!!:
Sudden release of hot organic chemical vapors or mists from process equipment operating at elevated temperature and pressure, or sudden ingress of air into vacuum equipment, may result in ignitions without the presence of obvious ignition sources. Published "autoignition" or "ignition" temperature values cannot be treated as safe operating temperatures in chemical processes without analysis of the actual process conditions. Any use of this product in elevated temperature processes should be thoroughly evaluated to establish and maintain safe operating conditions.

The information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances.

[PAINT REMOVERS] [WOOD PRESERVATIVES] [MEDICAL SUPPLIES] [CONCRETE MATERIALS]
[SAFETY SHEETS] [CONTACT US] [HOW TO BUY] [VISIT THE FURNITURE GUY] [HOME]

MSDS ALCOHOL 99 has the following structure:

- http://www.coppergreen.com/MSDS_Alcohol_99.htm
  - Image: http://www.coppergreen.com/images/LSafe.gif
  - Image: http://www.coppergreen.com/images/RSafe.gif

Location: http://www.coppergreen.com/MSDS_Alcohol_99.htm
File MIME Type: text/html
Source: Currently in disk cache
Local cache file: M1ND9EAQ.HTM
Last Modified: Tuesday, February 16, 1999 3:53:57 PM Local time
Last Modified: Tuesday, February 16, 1999 8:53:57 PM GMT
Content Length: 16103
Expires: No date given
Charset: Unknown
Security: This is an insecure document that is not encrypted and offers no security protection.

http://www.rathkman.com/rain pdf /4009.pdf

Material Safety Data Sheet
2-Propanol

ACC# 12090

Section 1 - Chemical Product and Company Identification

MSDS Name: 2-Propanol

Catalog Numbers: AC149320200, AC412790040, AC423830040, AC423830200, S77795, S77795-2SPEC, S77795HPLC, S77795SPEC, S77798, A415 20, A415 4, A415-20, A415-4, A41520, A4154, A416 1, A416 20, A416 20 001, A416 200, A416 200 001, A416 200 002, A416 200 003, A416 4, A416 500, A416-1, A416-20, A416-200, A416-4, A416-500, A4161, A41620, A41620 001, A416200, A416200 001, A416200 002, A416200 003, A416200001, A416200002, A416200003, A416200004, A41620001, A41620003, A416200LC, A41620LC, A4164, A4164LOT002, A416500, A416ALC, A416FB115, A416FB19, A416FB200, A416FB50, A416J500, A416P4, A416RB115, A416RB19, A416RB200, A416RB50, A416RS115, A416RS200, A416RS28, A416RS50, A416S 4, A416S-4, A416S4, A416SK 4, A416SK-4, A416SK4, A416SK4LC, A416SS 115, A416SS 50, A416SS-11, A416SS-115, A416SS-20, A416SS-200, A416SS-30, A416SS-50, A416SS115, A416SS28, A416SS50, A417 1, A417 4, A417-1, A417-4, A4171, A4174, A418, A418-20, A418-4, A418-500, A419 1, A419 4, A419-1, A419-4, A4191, A4194, A4194LC, A419RS115, A419RS200, A419RS28, A419SS115, A419SS200, A419SS28, A419SS50, A426F-1GAL, A426P 4, A426P-4, A426P4, A426PJ4, A426S 20, A426S 200, A426S 4, A426S-20, A426S-200, A426S-4, A426S20, A426S200, A426S4, A432-1, A451 1, A451 4, A451-1, A451-4, A4511, A4514, A451CU50, A451J1, A451SK 1, A451SK 4, A451SK-1, A451SK-4, A451SK1, A451SK4, A464 4, A464-4, A4644, A4644LC, A4644LOT002, A464J4, A5164LC, A5164LOT001, A519 4, A519-4, A5194, A520 4, A520-4, A5204, A520SS115, A520SS200, A520SS50, BPA416RS-115, BPA416RS-200, BPA416RS-28, BPA416RS-50, CRNA5164, HC 500 1GAL, HC500 1GAL, HC5001GAL

Synonyms:

Isopropanol, dimethyl carbinol, isopropyl alcohol

Company Identification:

Fisher Scientific
1 Reagent Lane
Fairlawn, NJ 07410

For information, call: 201-796-7100
Emergency Number: 201-796-7100
For CHEMTREC assistance, call: 800-424-9300
For International CHEMTREC assistance, call: 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#	CHEMICAL NAME	%	EINECS#
67-63-0	2-propanol	100	200-661-7

Hazard Symbols: F
Risk Phrases: 11

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: Colourless. Flash Point: 55 deg F. Warning! May cause skin irritation. Causes eye irritation. Flammable liquid. May cause central nervous system depression. May cause kidney damage. May form explosive peroxides. May cause respiratory and digestive tract irritation.

Target Organs: Kidneys, central nervous system.

Potential Health Effects

Eye: Produces irritation, characterized by a burning sensation, redness, tearing, inflammation, and possible corneal injury.

Skin: May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material. Prolonged and/or repeated contact may cause defatting of the skin and dermatitis. May cause irritation with pain and stinging, especially if the skin is abraded.

Ingestion: May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause kidney damage. May cause central nervous system depression, characterized by excitement, followed by headache, dizziness, drowsiness, and nausea. Advanced stages may cause collapse, unconsciousness, coma and possible death due to respiratory failure.

Inhalation: Inhalation of high concentrations may cause central nervous system effects characterized by headache, dizziness, unconsciousness and coma. Inhalation of vapor may cause respiratory tract irritation.

Chronic: Prolonged or repeated skin contact may cause defatting and dermatitis. May cause allergic skin reaction in some individuals.

Section 4 - First Aid Measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower lids. Get medical aid immediately.

Skin: Flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists.

Ingestion: If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.

Inhalation: Get medical aid immediately. Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Notes to Physician: Urine acetone test may be helpful in diagnosis.

Section 5 - Firefighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Vapors can travel to a source of ignition and flash back. Use water spray to keep fire-exposed containers cool. Containers may explode in the heat of a fire. This chemical poses an explosion hazard. Flammable Liquid. May form explosive peroxides. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas.

Extinguishing Media: Use water spray to cool fire-exposed containers. Water may be ineffective. Do NOT use straight streams of water. For large fires, use dry chemical, carbon dioxide, alcohol-resistant foam, or water spray. For small fires, use carbon dioxide, dry chemical, dry sand, or alcohol-resistant foam. Cool containers with flooding quantities of water until well after fire is out.

Autoignition Temperature: 810 deg F (432.22 deg C)

Flash Point: 55 deg F (12.78 deg C)(estimated) Health: ; Flammability: ;

Reactivity: Explosion Limits, Lower: 2.5 at 790F Upper: 12.1 at 1500F

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Absorb spill with inert material, (e.g., dry sand or earth), then place into a chemical waste container. Remove all sources of ignition.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Ground and bond containers when transferring material. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Avoid contact with heat, sparks and flame. Avoid ingestion and inhalation. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.

Storage: Keep away from heat, sparks, and flame. Keep away from sources of ignition. Store in a tightly closed container. Keep from contact with oxidizing materials. Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Exposure Limits

CHEMICAL NAME	ACGIH	NIOSH	OSHA - FINAL PELS
2-propanol	400 ppm; 983 mg/m3; 500 ppm STEL; 1230 mg/me STEL	400 ppm TWA; 980 mg/m3; TWA 2000 ppm IDLH (10 percent lower explosive limit)	400 ppm TWA; 980 mg/me TWA

OSHA Vacated PELs: 2-propanol: 400 ppm TWA; 980 mg/m, 3 TWA

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: Follow the OSHA respirator regulations found in 29CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

Section 9 - Physical and Chemical Properties

Physical State: Liquid
Appearance: colourless
Odor: solvent odor
pH: Not available.
Vapor Pressure: 33 mm Hg @ 20C
Vapor Density: 2.1 (air=1)
Evaporation Rate:
Viscosity: 2.1 cP at 77 F
Boiling Point: 82 deg C
Freezing/Melting Point:-90 deg C
Decomposition Temperature:Not available.
Solubility: Completely soluble in water
Specific Gravity/Density:0.78 (water=1)
Molecular Formula:C3H8O
Molecular Weight:

Section 10 - Stability and Reactivity

Chemical Stability: Stable. This material may be sensitive to peroxide formation.

Conditions to Avoid: Incompatible materials, light, ignition sources.

Incompatibilities with Other Materials: This material has been reported to be susceptible to autoxidation and therefore should be classified as peroxidizable.

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide, acrid smoke and fumes.

Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#: CAS# 67-63-0: NT8050000

LD50/LC50: CAS# 67-63-0: Oral, mouse: LD50 = 3600 mg/kg; Oral, rabbit: LD50 = 6410 mg/kg; Oral, rat: LD50 = 5045 mg/kg; Skin, rabbit: LD50 = 12800 mg/kg;

Carcinogenicity: CAS# 67-63-0: IARC: Group 3 carcinogen

Epidemiology: Early epidemiological studies suggested an association between the strong acid manufacture of isopropyl alcohol and paranasal sinus cancer in workers. The risk of laryngeal cancer may also be increased in these workers. However, it has not been tested adequately in animals to assess it s carcinogenicity.

Teratogenicity: No data available.

Reproductive Effects: No data available.

Neurotoxicity: No data available.

Mutagenicity: No data available.

Other Studies: No data available.

Section 12 - Ecological Information

Ecotoxicity: Acute aquatic effects: Fathead minnow: LC50 =1000 mg/L/96 Hr. Golden orfe: LC50 = 8970 mg/L/48 Hr. goldfish: LC50 = GT5000 mg/L/24 Hr.

Environmental Fate: This chemical has a low potential to affect aquatic organisms, secondary waste treatment microorganisms, and the germination and growth of some plants. It is readily biodegradable and is not expected to persist in an aquatic environment. It is not likely tobioconcentrate.

Physical/Chemical: None

Other: None

Section 13 - Disposal Considerations

Dispose of in a manner consistent with federal, state, and local regulations.

RCRA D-Series Maximum Concentration ofContaminants: None listed.
RCRA D-Series Chronic Toxicity ReferenceLevels: None listed.
RCRA F-Series: None listed.
RCRA P-Series: None listed.
RCRA U-Series: None listed.

Section 14 - Transport Information

US DOT:

Shipping Name:	Isopropanol
Hazard Class:	3
UN Number:	UN1219
Packing Group:	II

IMO: No information available **IATA:** No information available **/ADR:** No information available

Canadian TDG: No information available

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 67-63-0 is listed on the TSCA inventory.

Health & Safety Reporting List

CAS# 67-63-0: Effective Date: December 15, 1986; Sunset Date: December 15, 1996

Chemical Test Rules

CAS# 67-63-0: Testing required by: manufacturers; importers; processors (40

Section 12b

CAS# 67-63-0: export notification required - Section 4

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

SARA

Section 302 (RQ)

None of the chemicals in this material have an RQ.

Section 302 (TPQ)

None of the chemicals in this product have a TPQ.

SARA Codes

CAS # 67-63-0: acute, chronic, flammable.

Section 313

This material contains 2-propanol (CAS# 67-63-0, 100%),which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

Clean Air Act:

This material does not contain any hazardous air pollutants. This material does not contain any Class 1 Ozone depletors. This material does not contain any Class 2 Ozone depletors.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA. None of the chemicals in this product are listed as Priority Pollutants under the CWA. None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 67-63-0 can be found on the following state right to know lists:
California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts. California
No Significant Risk Level: None of the chemicals in this product are listed.
European/International Regulations: European Labeling in Accordance with EC Directives
Hazard Symbols: F
Risk Phrases: R 11 Highly flammable.
Safety Phrases: S 16 Keep away from sources of ignition - No smoking. S 7 Keep containertightly closed.
WGK (Water Danger/Protection) CAS# 67-63-0: 1
Canada: CAS# 67-63-0 is listed on Canada's DSL/NDSL List.
This product has a WHMIS classification of B2, D2B.
CAS# 67-63-0 is not listed on Canada's Ingredient Disclosure List.
Exposure Limits
CAS# 67-63-0: OEL-AUSTRALIA:TWA 400 ppm (980 mg/m3);STEL 500 ppm (12 25 mg/m3) OEL-BELGIUM:TWA 400 ppm (985 mg/m3);STEL 500 ppm (1230 mg/m 3) OEL-DENMARK:TWA 200 ppm (490 mg/m3);Skin OEL-FRANCE:STEL 400 ppm (980 mg/m3) OEL-GERMANY:TWA 400 ppm (980 mg/m3) OEL-JAPAN:STEL 400 p pm (980 mg/m3) OEL-THE NETHERLANDS:TWA 400 ppm (980 mg/m3);Skin OEL-THE PHILIPPINES:TWA 400 ppm (980 mg/m3) OEL-RUSSIA:STEL 400 ppm (10 m g/m3) OEL-SWEDEN:TWA 150 ppm (350 mg/m3);STEL 250 ppm (600 mg/m3) OE L-SWITZERLAND:TWA 400 ppm (980 mg/m3);STEL 800 ppm OEL-TURKEY:TWA 200 ppm (500 mg/m3) OEL-UNITED KINGDOM:TWA 400 ppm (980 mg/m3);STEL 500 ppm;Skin OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV OE L IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV

Section 16 - Additional Information

MSDS Creation Date: 2/02/1995
Revision #34 Date: 4/28/1998

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no way shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility ofsuch damages.

MSDS FOR ISOPROPANOL has the following structure:

- http://www.aben.cornell.edu/bmb_lab/safety/isopropanol.html

Location: http://www.aben.cornell.edu/bmb_lab/safety/isopropanol.html
File MIME Type: text/html
Source: Currently in disk cache
Local cache file: M1A1SO1V.HTM
Last Modified: Monday, June 18, 2001 8:02:36 PM Local time
Last Modified: Tuesday, June 19, 2001 12:02:36 AM GMT
Content Length: 44099
Expires: No date given
Charset: Unknown
Security: This is an insecure document that is not encrypted and offers no security protection.

Valid 02/2000 - 04/2000

Sigma Chemical Co.
P.O. Box 14508
St. Louis, MO 63178 USA
Tel: 314-771-5765

SARGENT-WELCH 1-800-SARGENT
P.O. BOX 1026
SKOKIE, IL 60076-8026

..MSDSDATA
..01 - PRODUCT IDENTIFICATION

PRODUCT NAME: 2-PROPANOL
COMMON SYNONYMS: ISOPROPYL ALCOHOL; ISOPROPANOL; IPA; SEC-PROPANOL; DIMETHYLCARBINOL
CHEMICAL FAMILY: ALCOHOLS
FORMULA: CH3CHOHCH3
FORMULA WT.: 60.10
CAS NO.: 67-63-0
NIOSH/RTECS NO.: NT8050000
PRODUCT USE: LABORATORY REAGENT
PRODUCT CODES: WLC3985H
9083

..STD "JTADDR"

EFFECTIVE: 04/10/90 ISSUED: 09/28/91
REVISION #05

PRECAUTIONARY LABELING

HEALTH	-	1	SLIGHT
FLAMMABILITY	-	4	EXTREME (FLAMMABLE)
REACTIVITY	-	2	MODERATE
CONTACT	-	2	MODERATE

LABORATORY PROTECTIVE EQUIPMENT

GOGGLES; LAB COAT; VENT HOOD; PROPER GLOVES; CLASS B EXTINGUISHER

U.S. PRECAUTIONARY LABELING

DANGER

EXTREMELY FLAMMABLE. CAUSES IRRITATION. MAY CAUSE EYE DAMAGE. HARMFUL IF SWALLOWED OR INHALED. MAY BE HARMFUL IF ABSORBED THROUGH SKIN.
KEEP AWAY FROM HEAT, SPARKS, FLAME. AVOID CONTACT WITH EYES, SKIN, CLOTHING. AVOID BREATHING VAPOR. KEEP IN TIGHTLY CLOSED CONTAINER. USE WITH ADEQUATE VENTILATION. WASH THOROUGHLY AFTER HANDLING. IN CASE OF FIRE, USE ALCOHOL FOAM, DRY CHEMICAL, CARBON DIOXIDE - WATER MAY BE INEFFECTIVE. IN CASE OF SPILL, SOAK UP WITH SAND OR EARTH. FLUSH SPILL AREA WITH WATER.

PRECAUTIONARY LABELING (CONTINUED)

INTERNATIONAL LABELING

HIGHLY FLAMMABLE.
KEEP CONTAINER TIGHTLY CLOSED. KEEP AWAY FROM SOURCES OF IGNITION -

NO
SMOKING.

STORAGE COLOR CODE: RED (FLAMMABLE)

..02 - COMPONENTS

COMPONENT	CAS NO.	WEIGHT %	OSHA/PEL	ACGIH/TLV
2-PROPANOL	67-63-0	99-100	400 PPM	400 PPM

..03 - PHYSICAL DATA

BOILING POINT: 82 C (179 F)
(AT 760 MM HG)

VAPOR PRESSURE (MMHG): 33
(20 C)

MELTING POINT: -89 C (-128 F)
(AT 760 MM HG)

VAPOR DENSITY (AIR=1): 2.1

SPECIFIC GRAVITY: 0.79 (H2O=1)

EVAPORATION RATE: 2.5 (BUTYL ACETATE = 1)

SOLUBILITY(H20): COMPLETE (100%)

% VOLATILES BY VOLUME: 100 (21 C)

PH: N/A

ODOR THRESHOLD (P.P.M.): 28.2

PHYSICAL STATE: LIQUID

COEFFICIENT WATER/OIL DISTRIBUTION: N/A

APPEARANCE & ODOR: CLEAR, COLORLESS LIQUID. ALCOHOL ODOR.
..04 - FIRE AND EXPLOSION HAZARD DATA
FLASH POINT (CLOSED CUP): 11 C (53 F)

NFPA 704M RATING: 1-3-0

AUTOIGNITION TEMPERATURE: 398 C (750 F)

FLAMMABLE LIMITS: UPPER - 12.0 % LOWER - 2.0 %

FIRE EXTINQUISHING MEDIA
USE ALCOHOL FOAM, DRY CHEMICAL OR CARBON DIOXIDE. (WATER MAY BE INEFFECTIVE.)

SPECIAL FIRE-FIGHTING PROCEDURES
FIREFIGHTERS SHOULD WEAR PROPER PROTECTIVE EQUIPMENT AND SELF-CONTAINED BREATHING APPARATUS WITH FULL FACEPIECE OPERATED IN POSITIVE PRESSURE MODE. MOVE CONTAINERS FROM FIRE AREA IF IT CAN BE DONE WITHOUT RISK. USE WATER TO KEEP FIRE-EXPOSED CONTAINERS COOL.

UNUSUAL FIRE & EXPLOSION HAZARDS
VAPORS MAY FLOW ALONG SURFACES TO DISTANT IGNITION SOURCES AND FLASH BACK. CLOSED CONTAINERS EXPOSED TO HEAT MAY EXPLODE. CONTACT WITH STRONG OXIDIZERS MAY CAUSE FIRE.

TOXIC GASES PRODUCED

CARBON MONOXIDE, CARBON DIOXIDE

EXPLOSION DATA-SENSITIVITY TO MECHANICAL IMPACT
NONE IDENTIFIED.

EXPLOSION DATA-SENSITIVITY TO STATIC DISCHARGE
NONE IDENTIFIED.
..05 - HEALTH HAZARD DATA
THRESHOLD LIMIT VALUE (TLV/TWA): 980 MG/M3 (400 PPM)

SHORT-TERM EXPOSURE LIMIT (STEL): 1225 MG/M3 (500 PPM)

PERMISSIBLE EXPOSURE LIMIT (PEL): 980 MG/M3 (400 PPM)

TOXICITY OF COMPONENTS

ORAL RAT LD50 FOR 2-PROPANOL	5840 MG/KG
INTRAPERITONEAL MOUSE LD50 FOR 2-PROPANOL	933 MG/KG
ORAL DOG LD50 FOR 2-PROPANOL	6150 MG/KG
SKIN RABBIT LD50 FOR 2-PROPANOL	13 G/KG

CARCINOGENICITY: NTP: NO IARC: NO Z LIST: NO OSHA REG: NO

CARCINOGENICITY
NONE IDENTIFIED.

REPRODUCTIVE EFFECTS
NONE IDENTIFIED.

EFFECTS OF OVEREXPOSURE

INHALATION: IRRITATION OF NOSE AND THROAT, HEADACHE, NAUSEA, DIZZINESS, DROWSINESS, IRRITATION OF UPPER RESPIRATORY TRACT, NARCOSIS, CENTRAL NERVOUS SYSTEM DEPRESSION, DIFFICULT BREATHING, PULMONARY EDEMA, UNCONSCIOUSNESS

SKIN CONTACT: IRRITATION, PROLONGED CONTACT MAY CAUSE DERMATITIS

EYE CONTACT: IRRITATION, MAY CAUSE CORNEAL DAMAGE

SKIN ABSORPTION: RAPID ABSORPTION

INGESTION: HEADACHE, NAUSEA, VOMITING, DIZZINESS, GASTROINTESTINAL IRRITATION, NARCOSIS, CENTRAL NERVOUS SYSTEM DEPRESSION, UNCONSCIOUSNESS

CHRONIC EFFECTS: NONE IDENTIFIED

TARGET ORGANS
EYES, SKIN, RESPIRATORY SYSTEM, LUNGS, CENTRAL NERVOUS SYSTEM

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE
SKIN DISORDERS, EYE DISORDERS, RESPIRATO

RY SYSTEM DISEASE

PRIMARY ROUTES OF ENTRY
INHALATION, INGESTION, SKIN CONTACT, EYE CONTACT, ABSORPTION

EMERGENCY AND FIRST AID PROCEDURES

INGESTION: CALL A PHYSICIAN. IF SWALLOWED, IF CONSCIOUS, GIVE LARGE AMOUNTS OF WATER. INDUCE VOMITING.

INHALATION: IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN.

SKIN CONTACT: IN CASE OF CONTACT, IMMEDIATELY FLUSH SKIN WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES WHILE REMOVING CONTAMINATED CLOTHING AND SHOES. WASH CLOTHING BEFORE RE-USE.

EYE CONTACT: IN CASE OF EYE CONTACT, IMMEDIATELY FLUSH WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES.

MEDICAL SURVEILLANCE
PROVIDE PREPLACEMENT AND PERIODIC MEDICAL EXAMINATIONS WITH EMPHASIS ON SKIN, SINUSES, AND RESPIRATORY SYSTEM.

SARA/TITLE III HAZARD CATEGORIES AND LISTS

ACUTE: YES CHRONIC: YES FLAMMABILITY: YES PRESSURE: NO REACTIVITY: NO

EXTREMELY HAZARDOUS SUBSTANCE: NO
CERCLA HAZARDOUS SUBSTANCE: NO
SARA 313 TOXIC CHEMICALS: YES CONTAINS ISOPROPYL ALCOHOL
GENERIC CLASS: C05
TSCA INVENTORY: YES
..06 - REACTIVITY DATA
STABILITY: STABLE HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

CONDITIONS TO AVOID: HEAT, FLAME, OTHER SOURCES OF IGNITION

INCOMPATIBLES: STRONG OXIDIZING AGENTS, ALUMINUM, STRONG ACIDS, NITRIC ACID, SULFURIC ACID, HALOGENS, ACTIVE HALOGEN COMPOUNDS, AMINES AND AMMONIA, ALDEHYDES

DECOMPOSITION PRODUCTS: CARBON MONOXIDE, CARBON DIOXIDE
..07 - SPILL & DISPOSAL PROCEDURES
STEPS TO BE TAKEN IN THE EVENT OF A SPILL OR DISCHARGE
WEAR SUITABLE PROTECTIVE CLOTHING. SHUT OFF IGNITION SOURCES; NO FLARES, SMOKING, OR FLAMES IN AREA. STOP LEAK IF YOU CAN DO SO WITHOUT RISK. USE WATER SPRAY TO REDUCE VAPORS. TAKE UP WITH SAND OR OTHER NON-COMBUSTIBLE

ABSORBENT MATERIAL AND PLACE INTO CONTAINER FOR LATER DISPOSAL. FLUSH

AREA WITH WATER.
DO NOT ALLOW SPILL TO ENTER DRAINS OR SEWER SYSTEM.

J. T. BAKER SOLUSORB(R) SOLVENT ADSORBENT IS RECOMMENDED FOR SPILLS OF THIS PRODUCT.

DISPOSAL PROCEDURE
DISPOSE IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL ENVIRONMENTAL REGULATIONS.

EPA HAZARDOUS WASTE NUMBER: D001 (IGNITABLE WASTE)
..08 - INDUSTRIAL PROTECTIVE EQUIPMENT
VENTILATION: USE GENERAL OR LOCAL EXHAUST VENTILATION TO MEET TLV REQUIREMENTS.

RESPIRATORY PROTECTION: RESPIRATORY PROTECTION REQUIRED IF AIRBORNE CONCENTRATION EXCEEDS TLV. AT CONCENTRATIONS UP TO 1000 PPM, A CHEMICAL CARTRIDGE RESPIRATOR WITH ORGANIC VAPOR CARTRIDGE IS RECOMMENDED. ABOVE THIS LEVEL, A SELF-CONTAINED BREATHING APPARATUS IS RECOMMENDED.

EYE/SKIN PROTECTION: SAFETY GOGGLES, UNIFORM, APRON, NEOPRENE GLOVES ARE RECOMMENDED.
..09 - STORAGE AND HANDLING PRECAUTIONS
STORAGE COLOR CODE: RED (FLAMMABLE)

STORAGE REQUIREMENTS
KEEP CONTAINER TIGHTLY CLOSED. STORE IN A COOL, DRY, WELL-VENTILATED, FLAMMABLE LIQUID STORAGE AREA. DO NOT STORE NEAR OXIDIZING MATERIALS.

SPECIAL PRECAUTIONS
BOND AND GROUND CONTAINERS WHEN TRANSFERRING LIQUID.
..10 - TRANSPORTATION DATA AND ADDITIONAL INFORMATION
DOMESTIC (D.O.T.)

PROPER SHIPPING NAME: ISOPROPANOL
HAZARD CLASS: FLAMMABLE LIQUID
UN/NA: UN1219
LABELS: FLAMMABLE LIQUID
REGULATORY REFERENCES: 49CFR 172.101; 173.125

INTERNATIONAL (I.M.O.)

PROPER SHIPPING NAME: ISOPROPANOL
HAZARD CLASS: 3.2 I.M.O. PAGE: 324

A
4
UN: UN1219 MARINE POLLUTANTS: NO PACKAGING GROUP: II
LABELS: FLAMMABLE LIQUID
REGULATORY REFERENCES: 49CFR 172.102; PART 176; IMO

AIR (I.C.A.O.)

PROPER SHIPPING NAME: ISOPROPANOL
HAZARD CLASS: 3.2
UN: UN1219 PACKAGING GROUP: II
LABELS: FLAMMABLE LIQUID
REGULATORY REFERENCES: 49CFR 172.101; 173.6; PART 175; ICAO/IATA

U.S. CUSTOMS HARMONIZATION NUMBER: 29051200507

N/A = NOT APPLICABLE OR NOT AVAILABLE
N/E = NOT ESTABLISHED

SARGENT-WELCH
VWR SCIENTIFIC
911 COMMERCE COURT
BUFFALO GROVE, ILLINOIS 60089-2375
1-800-727-4368

24 HOUR EMERGENCY ASSISTANCE
CHEMTREC 800-424-9300

HAZARD RATING
4 - EXTREME
3 - SEVERE
2 - MODERATE
1 - SLIGHT
0 - MINIMAL

HEALTH HAZARD - 1
FLAMMABILITY - 4
REACTIVITY - 2

IMPORTANT
MATERIAL SAFETY DATA SHEET
READ CAREFULLY BEFORE USING CHEMICAL
OSHA REQUIRES THAT THIS FORM BE KEPT ON FILE.

SECTION I - NAME

PRODUCT NO.: C3991E
PRODUCT NAME: ISOPROPYL ALCOHOL
CHEMICAL SYNONYMS: 2-PROPANOL
FORMULA: CH3CHOHCH3
C.A.S. NO.: 67-63-0

SECTION II - HAZARDOUS INGREDIENTS OF MIXTURES

PRINCIPAL HAZARDOUS COMPONENT(S)	%	P.E.L.	TLV UNITS
ISOPROPYL ALCOHOL +	N/A	N/A	N/A

+ CHEMICAL SUBJECT TO THE REPORTING REQUIREMENTS OF SARA TITLE III.

SECTION III - PHYSICAL DATA

MELTING POINT (F): -89 C
BOILING POINT (F): 82 C
VAPOR PRESSURE (MM HG): 33 @ 25 C
VAPOR DENSITY (AIR=1): 2.1
SOLUBILITY IN WATER: 100%
APPEARANCE & ODOR: CLEAR COLORLESS LIQUID, MILD ODOR.
SPECIFIC GRAVITY (H2O=1): .79
PERCENT VOLATILE BY VOLUME (%): 100%
EVAPORATION RATE (BUTYL ACETATE=1): 1.7

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SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (METHOD USED): 12 C CLOSED CUP
FLAMMABLE LIMITS IN AIR % BY VOLUME: LOWER - 2.0 UPPER - 12.0

EXTINGUISHER MEDIA: WATER SPRAY, DRY CHEMICAL, ALCOHOL FOAM, OR CARBON DIOXIDE. WATER SPRAY MAY BE USED TO KEEP FIRE EXPOSED CONTAINERS COOL.

SPECIAL FIREFIGHTING PROCEDURES: IN THE EVENT OF A FIRE, WEAR FULL PROTECTIVE CLOTHING AND NIOSH-APPROVED CONTAINED BREATHING APPARATUS WITH FULL FACE PIECE OPERATED IN THE PRESSURE DEMAND OR OTHER POSITIVE PRESSURE MODE. WATER MAY BE USED TO DILUTE SPILLS TO A NON-FLAMMABLE MIXTURE.

UNUSUAL FIRE AND EXPLOSION HAZARDS: FLAMMABLE! AUTOIGNITION TEMPERATURE 399 C. ABOVE FLASH POINT, VAPOR AIR MIXTURES ARE EXPLOSIVE WITHIN FLAMMABLE LIMITS NOTED ABOVE. VAPORS CAN FLOW ALONG SURFACES TO DISTANT IGNITION SOURCE AND FLASH BACK. CONTACT WITH STRONG OXIDIZERS MAY CAUSE FIRE OR EXPLOSION.

D.O.T. - ISOPROPANOL, 3, UN1219, PGII
APPROVED BY U.S. DEPARTMENT OF LABOR "ESSENTIALLY SIMILAR" TO FORM OSHA-20.

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE: 400 PPM (TWA)

EFFECTS OF OVEREXPOSURE:
ACUTE: IRRITATION TO SKIN, EYES, LUNGS, MUCOUS MEMBRANES, AND GI TRACT. NAUSEA, NARCOSIS, DROWSINESS, DIZZINESS.

CHRONIC: DERMATITIS.

EMERGENCY AND FIRST AID PROCEDURES:

SKIN: REMOVE CONTAMINATED CLOTHING. WASH SKIN WITH SOAP OR MILD DETERGENT AND WATER FOR AT LEAST 15 MINUTES. GET MEDICAL ATTENTION IF IRRITATION DEVELOPS OR PERSISTS.

EYES: WASH EYES WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES, LIFTING LOWER AND UPPER EYELIDS OCCASIONALLY. GET MEDICAL ATTENTION IMMEDIATELY.

INHALATION: REMOVE TO FRESH AIR, IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN. CALL A PHYSICIAN.

INGESTION: IF SWALLOWED, INDUCE VOMITING IMMEDIATELY AFTER GIVING TWO GLASSES OF WATER. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. CALL A PHYSICIAN IMMEDIATELY.

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SECTION VI - REACTIVITY DATA

STABILITY: STABLE (X) UNSTABLE ( )
CONDITIONS TO AVOID: AVOID HEAT AND IGNITION SOURCES.

INCOMPATIBILITY (MATERIALS TO AVOID): STRONG OXIDIZER, ALUMINUM, PERCHLORIC ACID, ETHYLENE OXIDE.

HAZARDOUS DECOMPOSITION PRODUCTS: CARBON OXIDES.

HAZARDOUS POLYMERIZATION: MAY OCCUR ( ) WILL NOT OCCUR (X)
CONDITIONS TO AVOID: NONE.

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: VENTILATE AREA OF LEAK OR SPILL. REMOVE ALL SOURCES OF IGNITION. CLEAN UP PERSONNEL REQUIRE PROTECTIVE CLOTHING AND RESPIRATORY PROTECTION FROM VAPORS. SMALL SPILLS MAY BE ABSORBED ON PAPER TOWELS AND EVAPORATED IN FUME HOOD. ALLOW ENOUGH TIME FOR FUMES TO CLEAR HOOD, THEN IGNITE PAPER IN A SUITABLE LOCATION AWAY FROM COMBUSTIBLE MATERIALS. CONTAIN AND RECOVER LIQUID WHEN POSSIBLE.

WASTE DISPOSAL METHOD: DISCHARGE, TREATMENT, OR DISPOSAL MAY BE SUBJECT TO FEDERAL, STATE OR LOCAL LAWS. THESE DISPOSAL GUIDELINES ARE INTENDED FOR THE DISPOSAL OF CATALOG-SIZE QUANTITIES ONLY.

CAN BE LIQUID INCINERATED IN RCRA APPROVED COMBUSTION CHAMBER OR ABSORBED WITH VERMICULITE, DRY SAND, EARTH OR SIMILAR MATERIALS. SCOOP UP WITH NON-SPARKING TOOLS AND PLACE IN CLOSED CONTAINER, AND DISPOSE IN A RCRA APPROVED FACILITY. DO NOT FLUSH TO SEWER.

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATION PROTECTION (SPECIFY TYPE): ORGANIC CARTRIDGE.

VENTILATION: LOCAL EXHAUST - X
MECHANICAL (GENERAL) - X
SPECIAL -
OTHER -

PROTECTIVE GLOVES: POLY OR RUBBER.
EYE PROTECTION: GOGGLES.
OTHER PROTECTIVE EQUIPMENT: LAB COAT.

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SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING & STORING: KEEP CONTAINER TIGHTLY CLOSED WHEN NOT IN USE.
STORE IN COOL, WELL VENTILATED PLACE.

OTHER PRECAUTIONS: READ LABEL ON CONTAINER BEFORE USING. DO NOT WEAR CONTACT LENSES WHEN WORKING WITH CHEMICALS.

CONDITIONS AGGRAVATED/TARGET ORGANS: PERSONS WITH PRE-EXISTING SKIN, EYE, RESPIRATORY DISORDERS MAY BE MORE SUSCEPTIBLE.

APPROVED BY: STEVEN C. QUANDT
EFFECTIVE DATE: 02/25/94
FOR LABORATORY USE ONLY. NOT FOR DRUG, FOOD OR HOUSEHOLD USE. KEEP OUT OF REACH OF CHILDREN.

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